Title (en)

METHODS OF PURIFYING NANOSTRUCTURES

Title (de)

VERFAHREN ZUR REINIGUNG VON NANOSTRUKTUREN

Title (fr)

PROCÉDÉS DE PURIFICATION DE NANOSTRUCTURES

Publication

EP 3386660 A1 20181017 (EN)

Application

EP 16809157 A 20161129

Priority

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Abstract (en)

[origin: GB2545190A] A suspension of nano-material such as silver nano-wires formed using the polyol process are purified on a scale greater than in one litre batches by cross-flow filtering the suspension. The filter can use a membrane with a mean mesh size in the range 20-40 microns and clogging can be reduced by vibrating the membrane. The nano-material can be used to make a transparent conductor. Figure 1 shows diluted reaction product 10 fed via a pump 40 from a tank 20 through a pre-filter 30 to a cross-flow filter 70. Smaller particles flow through a membrane in the cross-flow filter 70 into a permeate tank 90 while larger nano-wires flow along the membrane and exit as retentate which is returned to the tank 20. The diluted reaction product/retentate can be passed through the cross-flow filter 70 a plurality of times to improve the purity of the nano-wires. A lung tank 50 can be used to release pressure in the filtration system and pressure sensors 60 & 100 can be used to monitor pressure within the system.

IPC 8 full level

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CPC (source: EP GB KR US)

B01D 61/147 (2013.01 - KR); **B22F 1/0545** (2022.01 - EP GB KR US); **B22F 1/0547** (2022.01 - EP GB KR US); **B22F 1/14** (2022.01 - EP GB KR US); **B22F 1/145** (2022.01 - EP GB KR US); **B22F 9/24** (2013.01 - EP KR US); B01D 61/147 (2013.01 - EP US); B01D 2315/04 (2013.01 - EP KR US); B01D 2315/10 (2013.01 - EP KR US)

Citation (search report)

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